

ORIGINAL ARTICLE

USE OF PSYCHOACTIVE DRUGS AMONG MEDICAL UNDERGRADUATES IN ABBOTTABAD

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Background: Psychoactive substance abuse is prevalent among medical undergraduates of Pakistan, India & Western countries which can adversely affect the physical & psychological grooming of a medical undergraduate thus threatening to compromise their role as future physicians & health-care providers in the society. The objective of the present cross-sectional study was to explore the prevalence and patterns of psychoactive substance/drug consumption among undergraduate students of a public sector medical college in Abbottabad. **Methods:** Seven hundred and eighty participants after informed consent were requested to fill a questionnaire seeking information about their demographics, patterns & behaviours regarding ten common psychoactive substances of abuse including (Cigarettes, Benzodiazepines, *naswar*, cannabis, alcohol, amphetamine, opium, cocaine, heroin & organic solvents). **Results:** Overall students who responded were 698 (89.48%). One hundred and fifty (21.49%) admitted to the use of a psychoactive substance in past or at present. Majority users (71.33%) were males. Overall (81.33%) users were living in hostel or a rented apartment. Substance abuse was more prevalent among senior students, i.e., 30.06% & 24.24% in 4th year & final year MBBS respectively. Majority of the consumers, i.e., 93 (62%) were falling in an age group between 15–20 years. Main reasons behind substance abuse were: psychological stress (49.33%) and pleasure seeking (42.67%). Substances/drugs used by students in order of preference were Cigarettes 115 (76.67%), Benzodiazepines 48 (32%), *naswar* 42 (28%), Cannabis 41 (27.33%), Alcohol 24 (16%), Amphetamine 22 (14.67%), Opium 15 (10%), Cocaine 14 (9.33%), Heroin 11 (7.33%) & Organic solvents 05 (3.33%). Use of more than one substance was observed in 70 (46.67%) students. **Conclusion:** It is concluded that prevalence of cigarette smoking, *naswar*, benzodiazepines, cannabis & alcohol is high among medical undergraduates in Abbottabad which is a matter of concern. Efforts are needed to create better awareness among them about the hazards of substance abuse on their health, upcoming professional career and ailing humanity under their care.

Keywords: Pakistan; Psychoactive substance abuse; Psychoactive drug abuse; Medical students; Medical undergraduates

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INTRODUCTION

Human beings living around the globe pertaining to different cultures, historically, have searched for drugs or substances altering human mood or discernment including drinking, smoking & other drugs. Majority of them have a lifetime exposure of one illicit drug (mostly cannabis). Peruvian Indians used to masticate coca leaves. Available data is scarce about the hidden substance consumers as they are poorly studied during communal reviews.¹

The use of tobacco, alcohol and other psychoactive substances in a society, also by very young users^{2,3}, presently poses a grave social problem. The medical professionals are addicted also, though the subject has not been studied adequately so far.² However most of the students deny use of any psychoactive substance at this level.^{3,4}

In the western environment, relatively low dependence on cigarette smoking and consumption of psychoactive substances is observed. On the other hand, drinking of alcohol is quite common.^{1–7}

Alcohol is consumed by medical students mostly on the occasions of get-together, passing examinations and family functions in west.³

Substance abuse is also prevalent in medical undergraduates of Indo-Pak^{4,8,9} and Muslim countries like turkey¹⁰ with research revealing increased incidence of smoking as compared to alcohol & other substances^{4,10,11}.

Senior medical students consume the psychoactive drugs more often as compared to the junior ones.^{8,12} Similarly male sex is linked with predisposition towards consumption of these substances.^{8,12–15} Medical students who hire flats or live in hostels are more prone to psychoactive drug abuse.^{8,15}

Research reveals that there is a subjective variation about substance use in students as some of the users are regularly consuming these drugs while others are occasional or infrequent consumers.¹⁶

Relief from psychological stress^{5,9,10,16}, easy availability¹⁶, emotional immaturity¹⁷, student abuse, family history of alcoholism & smoking especially by

parents^{5,9,16,18} are the commonest risk factors associated with increased incidence of substance abuse in medical undergraduates. Which needs additional exploration¹⁸, as physical & psychological grooming of a medical undergraduate can be impaired or completely inhibited by abusing psychoactive substances.¹⁷

Living with parents^{14,19} avoiding links with drug users, condemning drug use, avoiding smoking, strong religious beliefs & practice are the factors which lead to reduced levels of illegitimate drug use.¹⁹ Appropriate and timely initiatives & interventions are needed to prevent and curb drug consumption among medical students throughout their undergraduate medical education career.^{5,7,19} Harm reduction strategies should be seriously considered.¹⁴

The objective of the present study is to explore the trends & patterns of various types of psychoactive substances/drugs among the medical undergraduates in Abbottabad who hail from various parts of Khyber Pakhtunkhwa, Azad Kashmir & Northern Areas of Pakistan keeping in view the scarcity of research data regarding the subject at country level. We also believe that their role is imperative as they will be the future doctors involved in providing health care to various segments of society. Therefore, the results & recommendations of the present study will be helpful to plan preventive programs & interventional strategies at this level by the college establishment.

MATERIAL AND METHODS

It was a cross-sectional survey carried out across the students of both genders, studying at undergraduate level of five years of MBBS in a government sector Medical College. Informed consent was obtained from the participants. A questionnaire was meticulously designed after having a comprehensive literature review & mutual discussion among the research team on the subject.

The first portion of the questionnaire sought demographic information of the participants, whereas the second part consisted of prevailing trends among medical students regarding ten psychoactive substances of frequent abuse including cigarettes, *naswar* (smokeless tobacco), alcohol, benzodiazepines, cannabis, amphetamine, heroin, opium, cocaine & organic solvents. The third part comprised of the questions about individual practices by the students regarding use of psychoactive substances. All possible efforts were made to protect the individual identities of the participants.

The questionnaire was distributed and subsequently re-collected by our team.

Data was entered in to and analysed by SPSS version-16. Descriptive statistics of demographic data, frequency and patterns of psychoactive substance/drug consumption were calculated.

RESULTS

During the present study, total number of students who responded out of 780 questionnaires distributed was 698 (89.48%). Total number of male responders was 385 (55.16%). Whereas female responders were 313 (44.84%). One hundred and fifty (21.49%) students admitted to the use of a psychoactive drug/substance in the past or at present. While majority of the students, i.e., 548 (78.51%) denied use of any such substance presently or in the past. Among the 150 users 107 (71.33%) were males, whereas 43 (28.67%) were females. Among the total users 122 (81.33%) were living in hostel or a rented apartment, whereas 28 (18.67%) were day-scholars living with parents or families.

An upward trend was observed from junior to senior level among students regarding substance use with an increase from 17.11% in the first year of medical college to 30.06% & 24.24% in 4th year & final year respectively (Table-1).

Among the overall users 22 (14.67%) admitted to the use of a psychoactive substance in the past (not now). Whereas 43 (28.67%) reported their use during the last year. However, 128 (85.33%) reported the current use. Eleven (7.33%) of the consumers admitted to the use of any such substance only once. Daily/regular consumers were 53 (35.33%), whereas occasional/infrequent consumers were 93 (62%). 49 (32.67%) out of the total 150 users were using drugs before they entered the medical college.

Majority of the consumers, i.e., 93 (62%) were falling in an age group between 15–20 years, while 43 (28.67%) fell in age group of 20 years & above. However, 14 (9.33%) of the users started the use between ages of 10–15 years (Table-2).

Sixty-seven (44.67%) admitted to the use of psychoactive drugs in group, out of which 26 (17.33%) were using those in social gatherings while 57 (38%) were using those individually. However, 26 (17.33%) reported the use both individually & in group.

Among the consumers 72 (48%) tried to quit whereas 40 (26.67%) suffered from withdrawal symptoms. Main reasons to start the psychoactive substance were: psychological stress & low self-esteem (studies, examination, troubled relationships) in 74 (49.33%) cases, whereas 64 (42.67%) started it to experience pleasure & fun, while 10 (6.67%) started those to counter non-specific somatic symptoms including pain & low mood etc. Overall 62

(41.34%) users disclosed that psychoactive substances are relatively easy to obtain (Table-3). Substances/drugs used overall by the students in order of preference were Cigarettes 115 (76.67%), Benzodiazepines 48 (32%), *Naswar* 42 (28%),

Cannabis 41 (27.33%), Alcohol 24 (16%), Amphetamine 22 (14.67%), Opium 15 (10%), Cocaine 14 (9.33%), Heroin 11 (7.33%) & Organic solvents 05 (3.33%). Use of more than one substance was observed in 70 (46.67%) students (Table-4).

Table-1: Substance abuse across various years of medical college

Year of MBBS	1 st year	2 nd year	3 rd year	4 th year	Final year	Total
Overall response rate	187	89	150	173	99	698
Substance users	32 (17.11%)	16 (17.98%)	26 (17.34%)	52 (30.06%)	24 (24.24%)	150
Substance non-users	155 (82.88%)	73 (82.66%)	124 (82.66%)	121 (69.94%)	75 (75.76%)	548

Table-2: Prevalence of substance use across various age groups (n=150)

Age group	Number/percentage of substance users
10—15 years	14 (9.33%)
15—20 years	93 (62%)
20—25 years	43 (28.67%)
Substance use before entering the medical college	49 (32.67%)

Table-3: Main reasons to start psychoactive substance/drug (n=150)

Psychological stress & low self-esteem	Pleasure & fun	Easy availability	Others (somatic symptoms, pain etc)
74 (49.33%)	64 (42.67%)	62 (41.34%)	10 (6.67%)

Table-4: Psychoactive substance/drug use in order of preference (n=150)

Substance/drug	Overall use	Male users	Female users
Cigarettes	115 (76.67%)	102 (68%)	13 (8.67%)
Benzodiazepines	48 (32%)	26 (17.33%)	22 (14.67%)
<i>Naswar</i> (smokeless tobacco)	42 (28%)	34 (22.67%)	08 (5.33%)
Cannabis	41 (27.33%)	35 (23.33%)	06 (04%)
Alcohol	24 (16%)	21 (14%)	03 (02%)
Amphetamine	22 (14.67%)	16 (10.67%)	06 (04%)
Opium	15 (10%)	09 (06%)	06 (04%)
Cocaine	14 (9.33%)	11 (7.33%)	03 (02%)
Heroin	11 (7.33%)	05 (3.33%)	06 (04%)
Organic solvents	05 (3.33%)	05 (3.33%)	00 (0%)

DISCUSSION

Psychoactive substances & drugs are consumed by the undergraduates of medical schools in the Western world as well as in Pakistan, India^{4,8,9} & Muslim countries like Turkey¹⁰. The present study identifies the frequency of prevalence and patterns of consumption of various psychoactive substances among medical undergraduates thus contributing in planning the necessary remedial measures to counter the growing problem.

Response rate was excellent during the present study as 89.46% of the undergraduates responded to the questionnaire which is almost corresponding to the response rate shown (86.6%) during a study from Lahore⁴ and slightly higher than the response rate (83.6%) shown by participants during a Polish study.¹⁵ However, our response rate was clearly higher contrary to the figures (50%) reported during a Canadian¹² & a Brazilian study (57.7%).¹⁹

Majority of the students during the present study (78.51%) denied use of any psychoactive substance during lifetime which is in close proximity with the figures (81.66%) reported during a Polish study³ & is slightly lower than the figures (83%) reported in a study from Lahore⁴. Overall, 150 (21.49%)

of the students confessed to the use of one or more of the psychoactive substances or drugs which is a bit higher than the figures reported (17%) in study from Lahore.⁴ Majority of the consumers (62%) were between 15–20 years of age in our study, clearly higher than the percentages (40% & 52.7%) reported in Pakistani & Indian studies respectively.^{4,16} However 9.33% of the students started the use between 10–15 years of age. Whereas 32.67% students started the practice before coming to the medical college. Which is an alarming situation. Therefore measures, strategies, prevention programs & parents' education need to be devised to curtail this problem at high school level even before the students get in to professional medical colleges.

Males are more frequent users of psychoactive substances and drugs as reported in the global literature.^{8,12,14} Majority of the drug consumers (71.33%) were also males in the current study.

Class seniority is a contributing factor in increased incidence of substance abuse as reflected in the global literature.^{8,12,20} This was demonstrated during our study where the incidence was 17.11% in first year increasing up to 30.06 & 24.24% in fourth & final year respectively. Our study also reflected that hostellers

were the majority consumers (81.33%) as compared to the day-scholars (18.67%). This is supported by the facts reported in the worldwide literature where students living in hostels or students who rented apartments were much more involved in substance abuse as compared to the students living with families or parents.^{6,8,14,15}

Main reasons to start the psychoactive substance use were: psychological stress & low self-esteem (studies, examination, troubled relationships) in (49.33%) cases, clearly higher than the figures reported (36.6% & 12.3%) in Turkish and Polish studies^{2,10}, but lower than the figures of 66.6% and 85% reported in studies from India⁵ & Brazil¹⁶. This important aspect confronting stress at this level needs to be worked out & addressed properly. Frequent general & psychological assessments & follow-ups must be brought in to play during their stay in the medical college.

Undergraduates also have a tendency to consume the drugs to achieve pleasure or fun as evident from global studies.^{2,13} The present study revealed that 42.67% of our students started these substances to experience fun & pleasure, while 6.67% started those to counter non-specific somatic symptoms including pain & low mood etc. Therefore, awareness programs need to be initiated about the potential adverse effects on health, possibility of life-time dependency & bad effects on professional career as they are the future doctors serving the ailing humanity in near future.

41.34% of our students disclosed that psychoactive substances are relatively easy to obtain, a figure which is almost analogous to the figure (46.9%) reported in an Indian study.¹⁶ Measures should be taken therefore to look in to the source & block the availability of psychoactive substances in and around the medical colleges. 17.33% of the undergraduates were using psychoactive substances in social gatherings which is almost in line with the figures reported (16.7%) in a Pakistani study.⁴

Daily/regular consumers were 35.33% in present study a bit higher than the figures reported in a Pakistani study⁴, but lower than the figures (49%) reported in an Indian study.¹⁶ However, encouraging aspect of our study was that majority of our undergraduates were occasional/infrequent consumers (62%) clearly higher than the figures of 18.72% and 23% in studies from Poland & India.^{2,16}

Majority of our students were inclined towards consumption of cigarettes (76.67%) a figure which is almost in line with the figures (78.9 % & 72.5%) reported during earlier Pakistani & Indian studies.^{4,11} Whereas the use was clearly higher in comparison to 44.1% reported among undergraduates of Turkey.¹⁰ The main reason behind this is that tobacco smoking is socially acceptable & easily accessible legal substance in societies of Indo-Pak.

Benzodiazepines were the next frequent drugs used as 32% of our undergraduates were consuming those. These figures are in semblance with the figures (33%) reported during a Croatian study²⁰ and slightly lower than the figures (38%) reported during a Polish study.⁶ However, our figures are slightly higher than the figures reported (25.1%) during the previous western studies.²¹ In our view, the reasons for frequent use of benzodiazepines is mental stress, frequent contact of the medical undergraduates with these drugs, easy availability over-the-counter without prescription & tendency of self-prescribing by the medical students.

Naswar (chewing smokeless tobacco) was the 3rd most frequent (28%) substance abused in our study. This figure is a bit higher than the figure reported (20%), in a Pakistani study from Jamshoro²², but clearly higher than the figure (8.2%) reported in an Indian study¹⁶. This trend can be explained on the basis of the fact that *naswar*/smokeless tobacco is a socially accepted, cheaper & 'easy to get' legal version of psychoactive substance used by both males & females in societies of Pakistan, India & Bangladesh.

Cannabis (*charras* or Marijuana) was next to follow as 27.33% of our students were consuming it at the time of study which is analogous to the findings (25.5% & 25.3%) reported in Pakistani & western literature.^{4,7} However our figure is lower than another figure of 54.7% reported also from the west.²¹

Alcohol was used only by 16% of our students contrary to the very high figures reported worldwide.^{2-7,13,14,19} This phenomenon can be explained by the fact that alcohol is unacceptable for use, socially, culturally, religiously & by law in our society. Whereas in the west it is freely available, socially & culturally acceptable to be consumed on various occasions.

The present study showed 14.67% of undergraduates consuming amphetamine which is lower than that of 32.9% reported in a western study.²¹ However, this percentage is exactly in line with the figures (14.6%) reported in study from Lahore⁴, and in close proximity to the figure (16.67%) reported during a Polish study³. As considerable percentage of students are of the opinion that amphetamine stimulates the higher centres of the brain resulting in improved mental vigilance, wakefulness & increased ability to concentrate on the studies especially during the annual examinations.

Opium (10%), cocaine (9.33%), heroin (7.33%) were down the list among the substances being consumed by the undergraduates in our study probably due to their lesser availability & notorious adverse effect profile.

Very few (3.33%) of our medical students used organic solvents (sniffing paints, petro-chemicals,

lacquer & glue) as a substance of abuse which is in line with the findings of the study from Lahore.⁴

CONCLUSION

In conclusion, we point out that psychoactive substance abuse especially that of cigarettes, benzodiazepines, *naswar*, cannabis and alcohol is very much prevalent among medical undergraduates of this area and is a matter of concern. There need to be awareness campaigns & refreshers' courses for undergraduate students highlighting the hazards of substance abuse on health. Moreover, measures must be taken to prevent their abuse at high school level even before coming to the medical colleges. Literature must be included in syllabus both at high school & medical college levels highlighting problems with their addiction, dependence & subsequent side effects.

AUTHORS' CONTRIBUTION

HN: Conceived the idea, literature search, paper writing, data collection & data analysis. AAK: Literature review, data collection & analysis, supervision of study. SB: Reference writing & proof reading.

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